INDIANA
Epidemiology
NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
2 North Meridian Street, 3-D
Indianapolis, IN 46204
317/233-7416

April 2003
Vol. XI, No. 4

The Growing Trend of Racial/Ethnic Minority Health Disparities: What is Indiana Doing?

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Background

Disparities in health status among various populations in the United States are not only vast, but appear to be increasing -- both with regard to premature death and to poorer general well-being. Regardless of unparalleled advancement in medical science, in some instances these disparities among population groups are widening both nationally and statewide.

Although Indiana is not as diverse as the nation as a whole, it is still reflective of the nation in terms of its constituent 2000 population.

	Indiana %	United States %
African American or Black	8.4%	12.3%
American Indian or Alaskan Native	0.3%	0.9%
Asian and Native Hawaiian and other Pacific Islanders	1.0%	3.6%
Hispanic or Latino	3.5%	12.5%
White	87.5%	75.1%

Each of the racial and ethnic groups has grown since the 1990 census, with the Hispanic or Latino population more than doubling in Indiana. As the population of the state and the nation continue to grow, there is a probability that the ever-increasing health disparity will amplify in the absence of planned intervention.

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Reports

The Forum on Chronic Diseases in Minority Populations in Indiana is the first report that the Indiana State Department of Health (ISDH), Office of Minority Health (OMH), produced specifically to address health disparities. It listed a variety of concerns and factors that are believed to influence the status of minority health in Indiana, along with a summary of the testimonies and comments received during the public forum.

In 2002, the ISDH produced a publication that addressed minority health disparities. The 2001 Indiana Minority Health Report from the OMH, compares the leading causes of death among racial and ethnic groups in Indiana with national data and the goals and objectives of Healthy People 2010. The report presents the top 10 leading causes of death for each racial and ethnic group. In total, 15 leading causes of death are presented. Each cause of death is presented with a short review of the disease, progress tables of mortality rates for Indiana from 1995 to 1999, differences between race and ethnic groups, and a comparison of Healthy People 2010 objectives targeted to that of national and Indiana mortality data. The report provides information to assess the changing health status of the community, to develop resources and interventions in areas of need, and to improve modifiable health risk factors for adverse health conditions. The 2001 Indiana Minority Health Report is available on the web at http://www.in.gov/isdh/publications/minority2001/.

NOTICE:
Hard Copies of Newsletter Not Available After May

To reduce printing expenses, mailing costs, and staff time, the *Indiana Epidemiology Newsletter* will no longer be available in hard copy after the May issue. To receive the newsletter by e-mail, please call Cheryl Thomas at (317) 233-7406 or e-mail her at *cthomas@isdh.state.in.us*. A link to the ISDH newsletter index page (http://www.statehealth.IN.gov/dataandstats/epidem/epinews_index.htm) will be sent directly to the e-mail address provided at no cost.

The common theme between the two reports is the need to educate and empower the public regarding the prevention, detection, and the treatment of chronic disease.

What is being done?

In 2000, the Minority Health Advisory Committee (InMHAC) was created by the ISDH under the Indiana Minority Health Initiative to provide advice and guidance to the ISDH in addressing minority health disparities. The committee subsequently was charged with the task of proposing a plan for eliminating racial and ethnic health disparities in Indiana. Membership on the InMHAC is by appointment of the State Health Commissioner and is representative of the diversity of people and organizations.

The Healthy Indiana Minority Health Plan

On April 22, 2003, the InMHAC Chairperson, Edwin C. Marshall, O.D., M.S., M.P.H., along with the InMHAC working group, will submit the Healthy Indiana Minority Health Plan to Gregory A. Wilson, M.D., State Health Commissioner.

The Healthy Indiana Minority Health Plan flows directly from the 2001 IMHR and Healthy People 2010. The 2001 IMHR provides the necessary data to assess documented gaps in health status and indentify critical areas of interventions for Indiana's racial and ethnic minority communities. The Healthy People 2010 objectives focus specifically on the areas of disease morbidity and mortality and identify immediate priorities for the InMHAC to establish Healthy Indiana Minority Health 2010 objectives.

The disease focus areas include the following:

- Cardiovascular Disease (Heart Disease)
- Malignant Neoplasms (Cancer)
- Cerebrovascular Disease (Stroke)
- Asthma
- Diabetes
- HIV/ AIDS
- Infant Mortality

The plan's overall approach is to view the solution in terms of structure, process, and outcome by identifying and applying Indiana-relevant objectives, activities, and strategies within existing structures and processes.

Osteoporosis: The Silent Disease

Andrea Klemm, Program Coordinator
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According to the National Osteoporosis Foundation, osteoporosis is a disease that affects 44 million Americans, 80% of whom are women. This disease is characterized by a thinning of bones and bone fragility that may lead to fractures of the spine, hip and wrist. Osteoporosis is often referred to as the "silent disease" because no symptoms occur to indicate bone loss until there is a fracture.

Bone formation takes place from birth to the mid-30s. The bulk of which occurs during the years of adolescence. After the mid-30s, bone formation slows down and can cause bones to become less dense. Once a woman reaches menopause, her risk for bone loss increases, and bone mass can decrease at a rapid rate. The insufficient levels of estrogen in a woman's body during menopause can be, among other things, directly correlated to the decrease of bone mass.

Although osteoporosis is often thought of as a disease of older people, it can occur at any age. Many factors can attribute to bone loss and osteoporosis, some of which include a diet low in calcium, physical inactivity, smoking, being female and family history of osteoporosis or fracture after age 45.

As a major public health threat, this disease costs upwards of $14 billion a year. Its costs and incidence are rising. Over one million fractures occur each year in the United States. The rate of hip fracture is two to three times higher in women than men. A woman's risk of hip fracture is equal to her *combined* risk for breast, uterine and ovarian cancer.

Prevention is the key to toppling osteoporosis and its debilitating effects. It is recommended that women under the age of 19 consume 1,300 mg of calcium with vitamin D and women aged 19-50 get 1,000mg of calcium and vitamin D per day. That is the equivalent of at least 3-5 servings of calcium rich foods, such as dairy products. Women aged 50 and older should have 1200-1500 mg of calcium with vitamin D in their diets per day. It is also important that women participate in weight-bearing exercise. It has been shown to help maintain strong bones and to encourage bone formation in young people. Physical activity is essential to bone health throughout the life span.

Bone density testing is the most accurate way to determine if any bone loss has occurred or if there is a risk for fracture. There are many forms of bone density testing and screening. The Office of Women's Health (OWH) at the Indiana State Department of Health uses ultrasound technology for screening that is quick, non-invasive and painless. The results from the screening are immediately produced and explained to the participant. During the interpretation, there is an opportunity for the participant to ask questions and receive educational material about osteoporosis. In order for each woman to understand her risk, a risk analysis questionnaire is sent home with her, along with her scores. Women are encouraged to give their scores to their doctors for assessment and to be placed in their medical file.

It is the goal of the *Indiana Osteoporosis Prevention Initiative* to provide bone density screenings and education throughout Indiana.

The Indiana Osteoporosis Prevention Initiative was established in 1997 by House Enrolled Act 1961 and is administered by the OWH. The program's initial objectives included prevention and treatment education for women throughout the state of Indiana. The Indiana Osteoporosis Prevention Initiative maintains four Sahara Bone Densitometers for screening women for bone density loss. This is an immediate, non-invasive test for identifying the risk for bone loss and has allowed the initiative to expand its objectives to include screenings.

OUTBREAK SPOTLIGHT….

"Outbreak Spotlight" *is a regularly appearing feature in the Indiana Epidemiology Newsletter. The event described below highlights the importance of contact tracing and exclusion policies for cases of illness in institutional-type settings.*

What a Tangled Web *Shigella* Weaves…
Outbreak of Shigellosis at a Daycare Center

Background

On November 30, 2001 a representative of a local health department (LHD) notified the Indiana State Department of Health (ISDH) of a possible shigellosis outbreak involving a local church and daycare center. The daycare center includes approximately 70 children and 12 staff. Due to the infectious nature of shigellosis and the young population of the daycare center, there was a high potential for transmission of infection.

Epidemiologic Investigation

The LHD and the ISDH conducted a collaborative investigation of this outbreak. As of November 30, the LHD had identified one positive adult church member. This case, whose onset was November 12, had two children and another family member pending testing. The children did not attend the daycare center. However, the LHD contacted the daycare director to inquire about possible cases due to the vulnerability of the daycare population. The daycare director reported that approximately twelve children in the toddler room had been ill with diarrhea within the last six weeks. The cause of the children's illness was never determined, and they were asymptomatic by this time. No staff members had been reported ill. Although the children are separated into different rooms according to age, they do use common restrooms. Training of staff regarding hand washing and environmental decontamination had already been performed. A letter describing the situation and pertinent exclusion policies was sent to all parents of daycare children on November 28. The Indiana Communicable Disease Rule, IAC 410 1-2.3, mandates that symptomatic children be to be excluded from daycare until they are asymptomatic and have completed five days of antibiotic therapy or have submitted two negative stool specimens. Asymptomatic children pending stool culture results or completing antibiotic therapy may be cohorted separately from other children.

To identify children who may have been asymptomatically shedding, ISDH recommended that all children and staff members submit stool specimens for testing (see "Laboratory Results"). The LHD distributed specimen collection containers to the daycare center, and the daycare director distributed specimen containers and verbally informed parents as they came to the daycare. The LHD transported specimens for testing at the ISDH Laboratories. Some children were also tested through private health care providers. Information regarding the possible outbreak was given during church services on December 2. On December 3, letters were issued to parents of all children ages six years and younger who attend the church.

By December 7, five children had tested positive for *Shigella*. Four of these children attended the daycare, and all were excluded. Three of the children also attended kindergarten at a nearby elementary School. The LHD issued letters were issued to parents of kindergartners and first graders at the school. The LHD also completed case investigation reports on all diagnosed cases and forwarded copies to ISDH. Case information was entered into an ISDH database to track demographic information, possible links between cases, and onset dates. At this time, one family whose children attend the daycare reported having symptoms compatible with shigellosis starting September 29. The family members were not diagnosed at that time; however, the daycare children were tested as part of the investigation.

By December 11, three more children had tested positive for *Shigella*. All attended the daycare, and one attended kindergarten at the school. The ISDH issued a letter describing the outbreak to local health care providers and surrounding local health departments. Letters had also been previously distributed to local health care providers by the LHD. On December 12, another child who attended the daycare and a local preschool was confirmed positive. The LHD issued letters to parents of the preschoolers, as well as parents of students attending the preschool, where three students with compatible symptoms had been identified and were pending results.

By December 19, eighteen cases had been confirmed, including one part-time volunteer at the daycare center. Since this case also served as a tutor in a high school special education class, the LHD issued letters to all tutors as well as parents of students in the classroom and the school nurse. As of January 2, 2002, 22 cases had been identified. By January 17, 24 cases had been confirmed positive, all with onset dates prior to January 1. No cases were identified after January 1. Active surveillance was conducted until January 22, one month since the last known onset date of December 18. At that time, the outbreak was declared over.

Environmental Assessment

Representatives from the LHD discussed infection control measures with the daycare director when the outbreak was first suspected and observed daycare practices during several visits. Two full-time food service staff members are the only employees who prepare food. Neither of these staff members were reported ill, and both tested negative for *Shigella*. Children and staff are not permitted to bring off-site food or beverages into the daycare center. One part-time volunteer became ill on December 10. Children and the volunteer who were symptomatic or who tested positive were excluded according the aforementioned exclusion policies.

No wading pools are used at the daycare site. Daycare centers licensed in the state of Indiana are not permitted to use wading pools. To rule out the possibility of water contamination at the daycare, the LHD collected a drinking water sample on December 11 (see "Laboratory Results") for testing at the ISDH Laboratories.

Laboratory Results

Approximately 85 stool specimens were submitted to the ISDH Laboratories for analysis. Additional specimens were submitted to private laboratories for testing. All children and staff at the daycare were tested, as well as symptomatic cases in preschools, schools, and contacts of cases. A total of 24 cases tested positive for *Shigella sonnei*. This particular strain was resistant to ampicillin and sensitive to sulfa antimicrobials.

A drinking water sample was collected from the daycare and submitted to the ISDH Laboratories for analysis. This sample tested negative for total coliforms and *E. coli*, an indicator of fecal contamination.

Conclusions

This investigation confirms an outbreak of shigellosis occurred in an Indiana county during November and December 2001. Twenty-four cases were identified during this time period, compared with no cases identified in this county during 2000 or 1999. The causative agent of this outbreak was *Shigella sonnei*. Sixteen of the 24 cases attended one daycare center, eight attended a nearby elementary school, three attended a local preschool, one attended a local high school, and two cases were household contacts.

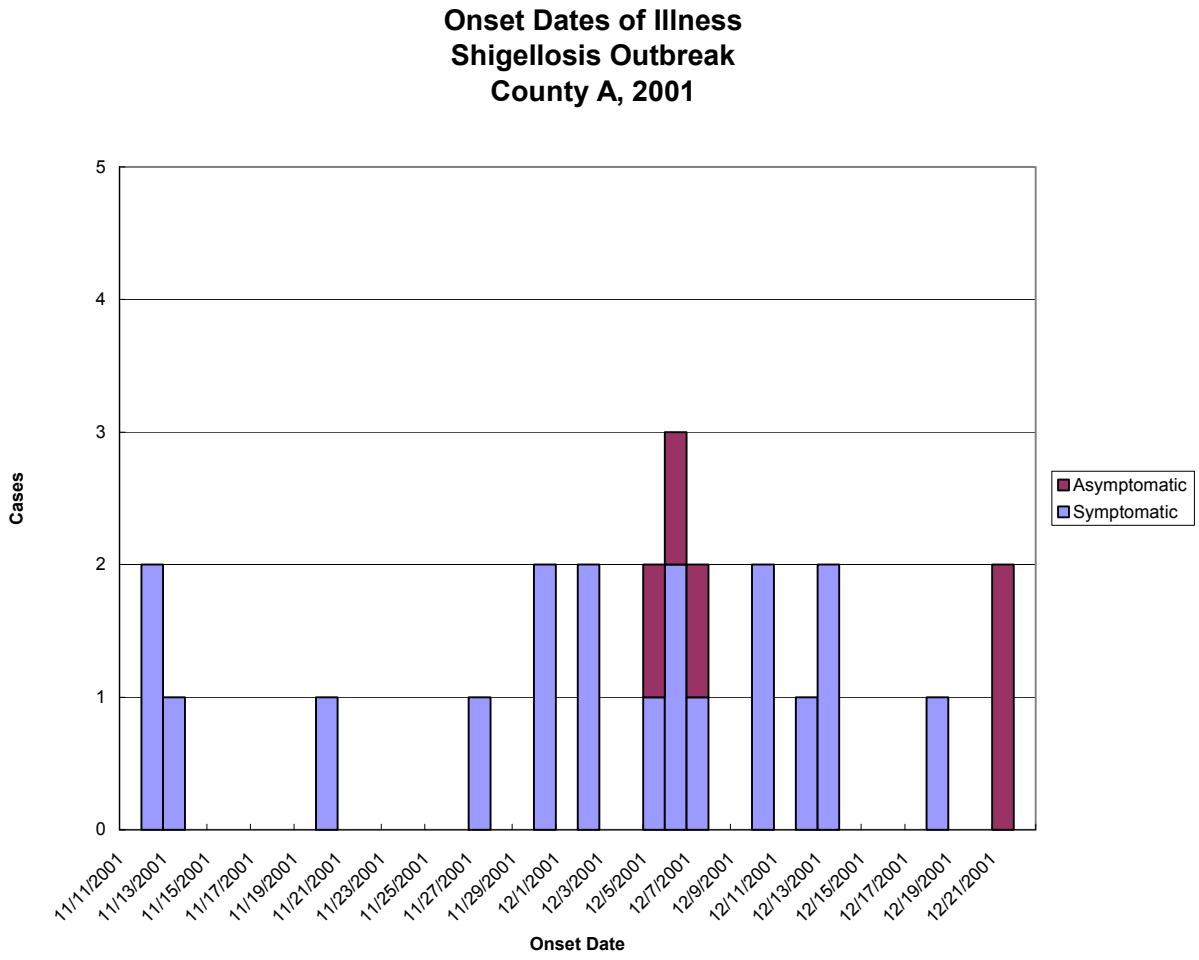
Shigella bacteria are found only in humans and are shed through stool. Symptoms of shigellosis include abdominal cramps, diarrhea (usually containing blood or mucus), nausea, vomiting, and fever. The outbreak strain of *Shigella* resembles the strain circulating in Indiana during the last two years, which produces watery diarrhea (rather than bloody or mucus-containing) and little or no fever. This particular strain is also resistant to ampicillin but generally sensitive to sulfa antimicrobials. Without appropriate antibiotic treatment, those infected can shed the bacteria as long as one month.

Transmission occurs through direct or indirect fecal/oral contact, with ingestion of as few as 10-100 organisms. Bacteria can be transmitted through contaminated food or water or person-to-person contact. Foodborne shigellosis outbreaks usually occur when an infected food handler with inadequately washed hands prepares food that is served raw (i.e., salads, vegetables, etc.) or that is handled extensively after cooking (i.e., sliced sandwich meats, rolls, etc.). Fecally-contaminated water can also transmit infection. Person-to-person can occur through direct physical contact or placing contaminated objects in the mouth.

The route of transmission in this outbreak was person-to-person rather than foodborne or waterborne. The two food workers at the daycare were asymptomatic and tested negative for *Shigella.* These are the only staff members who prepare food. Children are not permitted to bring any food or beverages into the center from off-site. Water samples from the daycare tested negative for total coliforms and *E. coli*, an indicator of fecal contamination.

Infection may have been introduced through an ill child who attended the daycare (see Figure 1). Infection can quickly spread, especially in the absence of adequate hygiene, due to the infectious nature of *Shigella* and the close personal contact within the population. The daycare director reported children being ill with diarrhea six weeks prior to the outbreak. These children were not diagnosed or treated. One family with children in the daycare was identified as having compatible symptoms as early as September 29. These children tested negative; however, over six weeks had elapsed since these children had been ill. If these children had shigellosis, shedding would likely have ceased by that time even in the absence of treatment.

Figure 1.



Note: Dates of asymptomatic cases reflect the date the first positive culture was identified.

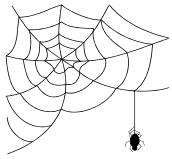
In addition to enforcing the Indiana Communicable Disease Reporting Rule regarding exclusion, several other measures were promptly taken to control the spread of the outbreak. First, recommendations for prevention, including exclusion policies, and hand washing guidelines, were provided to the daycare director by the LHD. Training for proper hand washing and environmental decontamination had already been performed at the daycare center. A letter describing the situation was sent to all parents of children enrolled in the daycare. When additional cases were identified, testing of all daycare children and staff was initiated to identify asymptomatic carriers. Children and staff who developed symptoms or tested positive were immediately excluded. One staff member did become ill, but given that the onset date occurred after the outbreak had begun, this person was part of the outbreak rather than the cause. Additional letters were sent to school parents and health care providers as the investigation progressed. Once introduced into a vulnerable population, shigellosis can be difficult to control even with the most stringent measures, due to its highly infectious nature.

In general, most person-to-person outbreaks of shigellosis can be prevented by strictly adhering to the following practices:

1. Thoroughly wash hands with soap and water before preparing food, after using the restroom, after diapering children, and before eating.
2. Thoroughly wash hands with soap and water after assisting someone using the restroom or caring for people ill with diarrhea and vomiting.
3. Supervise young children when they are washing their hands.
4. Exclude food handlers or staff having direct care of children from working while ill with diarrhea and/or vomiting until symptoms have ceased.
5. Exclude children from attending daycare while ill with diarrhea or if they are infected with *Shigella.*

Current Smallpox Vaccination Status as of April 2, 2003			
Number Vaccinated		**Percent Evaluated**	
Total # vaccinated	765	% of vaccinees evaluated for take response	62%
Total # vaccinated in public health response teams	229	% of vaccinees with major take response	95%
Total # vaccinated in health care response teams	524		
Total # vaccinated, other	12	Number hospitals represented in Indiana	36

NOTE: Based on new information about the potential cardiac-related risk from the smallpox vaccine, ISDH is temporarily postponing smallpox vaccination clinics until more information is available. These data will be updated when vaccinations resume.



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.in.gov/isdh/dataandstats/epidem/epinews_index.htm

Indiana Cancer Incidence Report (1990, 95,96, 97)

Indiana Cancer Mortality Report (1990-94, 1992-96)

Indiana Health Behavior Risk Factors (1995-96, 97, 98, 99, 2000, 2001)

Indiana Hospital Consumer Guide (1996)

Public, Hospital Discharge Data (1999, 2000, 2001)

Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)

Indiana Marriage Report (1995, 97, 98, 99, 2000)

Indiana Mortality Report (1999, 2000)

Indiana Natality Report (1995, 96, 97, 98, 99, 2000, Provisional 2001)

Indiana Induced Termination of Pregnancy Report (1998, 99, 2000)

Indiana Infectious Diseases Report (2000)

Former Indiana Report of Diseases of Public Health Interest (1996, 97, 98, 99)

HIV Disease Summary

Information as of March 31, 2003 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

392	New HIV cases from April 2002 thru March 2003	12-month incidence	6.45 cases/100,000
3,707	Total HIV-positive, alive and without AIDS on March 31, 2003	Point prevalence	60.97 cases/100,000

AIDS cases to date:

482	New AIDS cases April 2002 thru March 2003	12-month incidence	7.93 cases/100,000
3,337	Total AIDS cases, alive on March 31, 2003	Point prevalence	54.88 cases/100,000
7,056	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in March *MMWR* Week 10-13		Cumulative Cases Reported January - March *MMWR* Weeks 1-13	
	2002	2003	2002	2003
Campylobacteriosis	17	22	40	43
Chlamydia	1,496	933	4,302	4,046
E. coli O157:H7	2	3	7	6
Hepatitis A	4	3	11	6
Hepatitis B	2	4	6	4
Invasive Drug Resistant *S. pneumoniae* (DRSP)	29	29	53	40
Gonorrhea	659	352	1,937	1,556
Legionellosis	1	2	4	3
Lyme Disease	0	1	2	3
Measles	0	0	0	0
Meningococcal, invasive	4	9	11	13
Pertussis	6	3	14	7
Rocky Mountain Spotted Fever	0	0	0	0
Salmonellosis	11	27	50	55
Shigellosis	4	17	13	26
Syphilis (Primary and Secondary)	4	2	14	7
Tuberculosis	8	8	22	30
Animal Rabies	0	0	1 (bat)	2 (bats)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at (317) 233-7665.

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Epidemiology
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The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.